

Cropping Patterns in Sheikhpura District: A Geographical Study

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Abstract

Sheikhpura district has highly diversified cropping patterns. Its agriculture is influenced by physical and cultural environment. Seasonal rainfall, regional variation in soil type, existing irrigation facilities, terrain characteristic, population pressure on land etc. Jointly influence cropping character of Sheikhpura district. Among four harvest season namely Badhai, Aghani, Rabi and Garma Aghani ranks first followed by Rabi. Among the crops rice occupies the first position and covers about 50.70 percent of the total cropped area in the district. Wheat ranks second in position covering about 17.48 percent of total cropped area. But there is much regional variations in acreage of different crops. In 6 blocks rice occupies the first rank excluding Ghat Kusumbha block in the district. Wheat stands first in one (1) block and second in Ariari and Ghat Kusumbha blocks in the district. In agricultural landscape maize occupies Sheikhpura has second rank where devotes 2.88 percent of its cropped area under Bhadai - maize in the study area. In spite of must crop diversities it has been attempted to recognise agricultural regions on the basis of homogeneity in agricultural conditions. Seven agriculture regions have been recognised in the district. With technological advancement popular cropping practices is slowly emerging in those regions which are profit giving to the cultivators.

Keywords: Agriculture, Irrigation, Harvest, Cropped, Landscape.

Introduction

Study Area

The district of Sheikhpura encompasses an area of 68903.94 hectares and extends from 24°59'N to 25°16'N latitudes and from 85°36'E to 86°00'E longitudes. About 77.22 percent of its total geographical area is net sown area. Agriculture is the mainstay of majority of the people in the district. According to 2011 census about 35.30 percent of the total workers is engaged in agricultural activities. Its agriculture is influenced by physical and cultural environments. The terrain ranges from alluvial plain of north to rugged surface of outliers of Chotanagpur plateau in the south. Seasonal character of monsoonal rainfall with variability co-efficient both monthly and annual varied soil types both at macro and micro levels, population pressure on land food habits etc govern cropping practices in the district. Besides, irrigational facilities, adoption of agro Technology play important role in increasing agricultural production.

Irrigations Production

The quantity of irrigation water to be applied for certain areas an important source of increasing agricultural depends on the annual rainfall and its utilization, type of soil, existing irrigation facilities, irrigation practices followed and cropping patterns of all crops, rice is the most dependent upon irrigation because of its need for flooding at a certain stage of growth (Clark, 1964). The average percentage of irrigated area to the net sown in 2019-2020 is 36.40 but its distribution is very much anomalous in various tracts. The district according to its soil and situation can be divided into two main parts for the feasibility of the irrigational schemes. South-east to north-east of Sheikhpura district irrigation is practiced in larger area than north-east to south-west. In south-east to north-west of the district the development of irrigation facilities has modified the cropping pattern (Singh, 1974).

Different government publications have been tapped for the secondary data used in the present study. Care has been taken to ensure the accuracy, reliability and homogeneity of the statistical information given. In the present study district has been selected as the unit of the

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study. The then existing number of 6 blocks in Sheikhpura in 2011 has been taken into account.

Cropping Pattern

A cropping system is the kind and sequence of crops grown on a area of soil over a period of time. It may be a regular rotation of different in which the crops follow a definite order of appearance on the land or it consist of only one crop grown year after year on the same area (Singh,1972 The agriculture is the mainstay of an overwhelming majority of rural.

Shieikpura district is essentially an agricultural district where more than nine-tenth of the total population depends on agriculture for its livelihood Mohammad and Thakur, 1981), Population pressure is high and even critical in areas of high concentrations, this has its bearing on the cropping

patterns. As the pressure of population on agricultural land increases, the area sown more than once appears to increase correspondingly. it has been found that density of population and proportion of multiple cropping is very strongly co- related.

Sheikhpura has a highly diversified cropping pattern with a wide range of crops (Prasad, 1984), There are three main agricultural harvests in the district of Sheikhpura, namely (1) Bhadai or autumn (Crops harvested in September October), (2) Aghani (Crops harvested in November December) and (3) Rabi (Crops harvested in Rabi or spring about March), A fourth harvest consists of summer crops called Garma (i.e. of summer).

The relative proportion of this harvest can be seen from the following table:

Table - 1
Seasonwise Utilization of Area Sown (2019-2020)
Net Area Sown of Sheikhpura -53204.22 Hect.
Total area sown of Sheikhpura - 89201.89 Hect

Harvest	Area in '000 Hect	% of Net Area Sown of Sheikhpura	% of Total Area Sown of Sheikhpura
Bhadai	3517.17	6.61	3.94
Aghani	50245.24	94.44	56.33
Rabi	34047.95	64.00	38.17
Garma	1391.53	2.62	1.56
Total	89201.89	167.67	100.00

Source: Compiled by the Scholar

From the above table it is evident that Aghani and Rabi crops occupy dominating place in the cropping pattern of Sheikhpura district while Garma crops are quite insignificant.

Bhadai harvest generally consists of broadcast early ripening varieties of rice, the different millets, maize, jute, some pulses, eg Mung, urad and vegetables, etc. This harvest is more important in 3 blocks have higher share of under Bhadal crops than the district average. There are two areas of high concentration of Bhadal crops. The first covers Sheikhpura and the second belt consist of Barbigha and Shekhopur Saral blocks in the north western part of the district.

Where the heavy early showers and later inundation are responsible for a large area under

maize, Kulthi, Mung, Til and Sanai, while the higher and higher land towards the west are given to maize (Dayal, 1952). The Aghani harvest consist essentially of winter, rice, sugarcane, Jowars, some oilseeds and pulses The Rabi harvest includes a large number of crops, such as wheat, barley, gram, Khasari, Masoor, peas, tobacco, lentil, Arhar, linseed, rape and mustard and others. Rabi occupies large areas in the north-east and north-west of the district but the both side of out liers of Chotanagpur plateaus as the upland soil is poor and the moisture insufficient for cold weather crops.

The relative position of different crops in the district is shown in the following table:

Table - 2
Area and Proportion of Different Crops in Sheikhpura District (2019-2020)

S.No.	Crops	Area in (000 Hect.)	% of the Total Cropped Area
1	Rice	45225.00	50.70
2	Wheat	15596.00	45.77
3	Maize	3969.00	2.51
4	Gram	2240.00	0.31
5	Jai	275.00	11.02
6	Vegetables	9833.45	3.59
(i)	Potato	3200.32	3.72
(ii)	Onion	3320.00	3.71
(iii)	Others	3313.13	11.31
7	Pulses	10086.44	4.79
(i)	Khesari	4275.00	4.34
(ii)	Masoor	3875.00	0.56
(iii)	Arhar	500.00	0.70
(iv)	Peas	150.00	1.44
(v)	Mung and Urad	1286.44	
	Oilseeds	1048.00	1.17

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8	Rai/ Mustared/Tisi/Till	995.00	1.12
(i)	Suraj Mukhi	73.00	0.08
9	Sugarcane	929.00	1.04
	Total	89201.89	100.00

Source : Compiled by the Scholar

These figures bring out the dominant position of rice in the agricultural economy of the district of Sheikhpura. It alone covers almost half of the total cropped area. It out weight others crops. Nearly two-thirds of the rice area of Sheikhpura district is found in south- west and south- east, north-west of the district, such as Ariari, Chewara, Barbigha and Sheikhpura (40.96%) and Ghat Kusumbha (36.99 %) of the total cropped area. These blocks are located in the middle part and north-east corner of the district Wheat, Khesari, maize; Masoor and gram are the next most important food crops. After rice, wheat is the most extensive crop grown in the district. Wheat belt of Sheikhpura includes the almost all blocks of the district and the tube-well with electricity irrigated area of the blocks of the district. Maize is the third most important crop of Sheikhpura district after rice and wheat. The chief maize land of Sheikhpura district consists of the North West and west, and middle part of the district, namely Barbigha, Shekhopur Sarai and Sheikhpura blocks of the district. Gram is the most important among the various pulses in the study area. Gram is extensively grown throughout the north-east and north-west and middle part of the district due to these parts are related to the Tal land. District of Sheikhpura agricultural economy is primarily a food crop economy is shown by the fact that about 98.96% of the cropped hectareage are devoted to food grains. Sugarcane which is so important in the cash crops economy of Sheikhpura district covers only 1.04% of the total cropped hectareage. It is worth pointing out that north-west and west, south-east and south-west and middle part of the district constitutes the base of sugar industry (Prasad, 1978).

The Ranking of Crops

The relative position of strength among the crops were ascertained by simply ranking them for each blocks in order of percentage of total cropped land occupied by each crops.

First Ranking

Rice is the first ranking crop in all blocks of the district

Second Ranking Crops

Wheat is the second ranking crops. Wheat dominates the agricultural landscape and holds second rank in Barbigha, Shekhopur Saral, Chewara, Anari, Sheikhpura and Ghat Kusumbha blocks of the district.

Third Ranking Crops

Maize is the third ranking crops which dominate in all blocks of the district. The distributional pattern of the third ranking crops is more fragmented and diversified. A total of nine total crops ie, rice, wheat, malze, Khesari, Masoor, gram, potato, onion and sugarcane hold third rank in one more blocks of the district.

Fourth Ranking Crops

Distributional patterns become more fragmented and diversified in fourth ranking crops.

Agricultural Regions in Sheikhpura

The term Agricultural Region refers to an area characterised by homogeneity agricultural conditions, especially of crops or crops grown and of scientific dissimilarities from the conditions in adjacent area which are clearly recognizable. Therefore, an agricultural is an entity in which agricultural scene is essentially the same. In Sheikhpura the agro-climatic condition is almost similar throughout the state, district and blocks. However, there are variations in the cropping patterns at micro level. Therefore, different crop association might be the basis for delineation of agricultural regions (Iha, 1991).

In Sheikhpura district the following agricultural regions have been identified:

The Sheikhpura district may be divided into four crops combination regions viz. 8 crops combination, 7 crops combination, 6 crops combination and crops combination regions. (Table-3)

Table- 3
Sheikhpura: Crop Combination (2019-2020)

S.No.	Name of Blocks	No. of Crops	Name of Crops Combination	% of Total Cropped Ara
1	Barbigha	8	P.W.M.G.V.P.K.M.	99.84
2	Shekhopur Saral	5	P.W.M.V.S	87.06
3	Sheikhpura	7	P.W.M.G.V.K.M	95.46
4	Ghat Kusumbha	7	P.W.M.G.V.K.M	96.12
5	Chewara	5	P.W.V.K.M.	99.32
6	Ariari	6	P.W.P.O.K.M.	98.89

P- Paddy
W-Wheat
M-Maize
G-Gram
V-Vegetable
B-Barley
K-Khesari
M-Masoor
Mu-Mung

Sa-Sanai
T-Til
Ku - Kulthi
U-Urad
P- Peas
O-Oilseeds
S-Sugarcane
A-Arhar

Source: Compiled by the Scholar.

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8 crops combination regions are in Barbigha. This block has maximum numbers of crops and the dominance of any one or two crops, one or three crops are not found here. 7 (seven) crops combination regions are in Sheikhpura and Ghat Kusumbha blocks, 6 (six) crops combination is found in Ariari. 5 (five) crops combination regions are in Shekhopur Sarai and Chewara blocks. All these blocks are comparatively fertile leading to the raising of number of crops (Fig. 1).

It is significant to note that maize is produced in four blocks excluding Chewara and Ariari. Paddy and wheat are most important common crops in almost all blocks of the district. It occupies first ranking position in the region. No other crop is capable of competing with it. Masoor, Khesari, gram and sugarcane are also common in most of the blocks of the study area.

In order to account for the prevailing diversities in cropping practices the district has been divided into eight agro-climatic regions. These regions adopted their own cropping practices depending on the suitability of land, the climate of the area and the food habits of the population. Accordingly, in the study region inferior crops barley, Til and Kulthi are common cropping practices. The cropping pattern in alluvial areas are more diversified and superior crops like paddy, wheat, maize, gram, Khesari, Masoor, potato, onion, peas, sugarcane, pulses, etc. are grown in each block in the region depending upon the facilities in respective blocks of the district Sheikhpura. With the advancing technology the variation in cropping practices tends to become minimised and broader and more popular cropping patterns are slowly emerging out in these regions. However, only such patterns are stabilised which give profit to the cultivators. The appearance of new germ plasm in which high yielding varieties for more important crops such as hybrid maize, paddy and wheat varieties which have potentials of high yields, to extent of three to four times the yield of exist while improved varieties has brought out a silent revolution amongst agricultural population of the district. These new cropping practices are fast replacing the old cropping patterns. The changeover has been accelerated due to the urgent need for increased production of crops to attain self-sufficiency in food within the shortest possible time. Practices of intensive farming with the help of all the important inputs and raising repeated crops without affording un-necessary fallow to the land are now a common feature with the enlightened cultivators whose number is on increase. Raising of three or even four crops annually from the same field is no longer a matter of surprise and very often cropping patterns such as maize, hybrid maize, wheat or maize, potato or paddy, wheat, green manure etc. are now being commonly adopted by such cultivators, thereby ensuring rockethigh production of crops from the same field. This awakening has gradually minimized the diversities of cropping patterns and practically everywhere two or three important rotation are being adopted, irrespective of the areas of variations in agro-climatic soil conditions accordingly

the practice of hybrid maize followed by wheat dwarf paddy and wheat or paddy and wheat of high yielding varieties during Kharif and Rabi seasons are gaining more and more popularity. All these can be achieved through extensive and balanced use of fertilizers and provision of other crop inputs (Mehrotra, 1972).

Conclusion

The district of Sheikhpura has a highly diversified cropping patterns and variety of crops such as cereals, pulses, sugarcane, oil seeds etc. are grown. Agriculture is the mainstay of an overwhelming majority of rural masses of the district. But, agriculture, the backbone of district economy is in perilous situation. The economy of the state is inextricably linked with weather and as such property is dependent on the good performance of the monsoon. But the rainfall is exceedingly uncertain, fitful and capricious, virtually monsoon is the pivot round which the economic prosperity of the people of the state revolves. As about 90% of the annual total rainfall is received during the short period of 4 months (from mid-June to mid-October), irrigation by surface water an inescapable means. But the average percentage of the irrigated area to the net area sown in 2019-2020 was only 37%. The problem is not merely of weather. The problems of agriculture are deeprooted, other factors include tenancy system, small and fragmented holdings, uneven distribution of land, traditional equipments and technology, lack of proper irrigation facilities and dearth of capital. For securing maximum crop production, the best use of available land has to be made and the latest methods of crop husbandry have to be adopted. If all aspects of agriculture are taken care of, it can achieve a glorious position in the field of agriculture.

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